



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 11:16 AM GMT

PDB ID : 3OH1  
Title : Protein structure of USP from L. major bound to URIDINE-5'-DIPHOSPHATE-Galacturonic acid  
Authors : Dickmanns, A.; Damerow, S.; Neumann, P.; Schulz, E.-C.; Lamerz, A.; Routier, F.; Ficner, R.  
Deposited on : 2010-08-17  
Resolution : 2.18 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.  
We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467  
Mogul : 1.7 (RC4), CSD as536be (2015)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20026688  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk26865

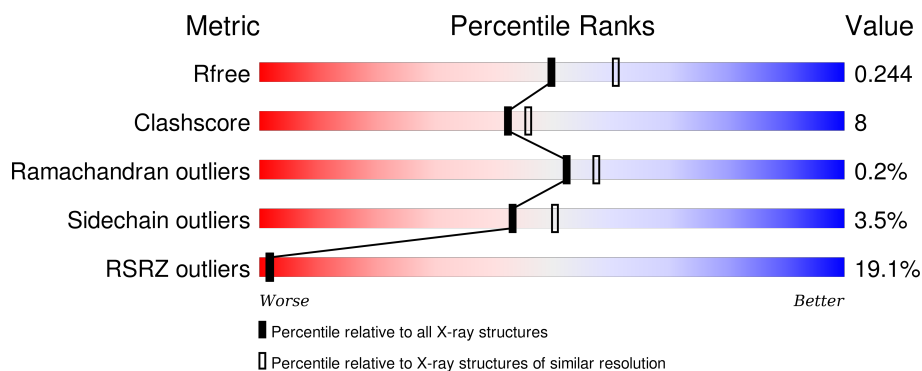
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 2.18 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	91344	5130 (2.20-2.16)
Clashscore	102246	5965 (2.20-2.16)
Ramachandran outliers	100387	5863 (2.20-2.16)
Sidechain outliers	100360	5864 (2.20-2.16)
RSRZ outliers	91569	5142 (2.20-2.16)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	641	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	GOL	A	643	-	-	-	X

## 2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 4819 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

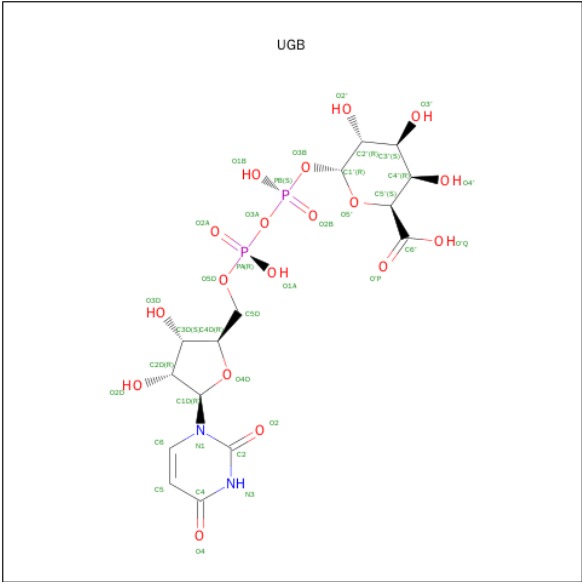
- Molecule 1 is a protein called UDP-sugar pyrophosphorylase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	582	Total	C	N	O	S	0	4	0
			4551	2891	787	854	19			

There are 11 discrepancies between the modelled and reference sequences:

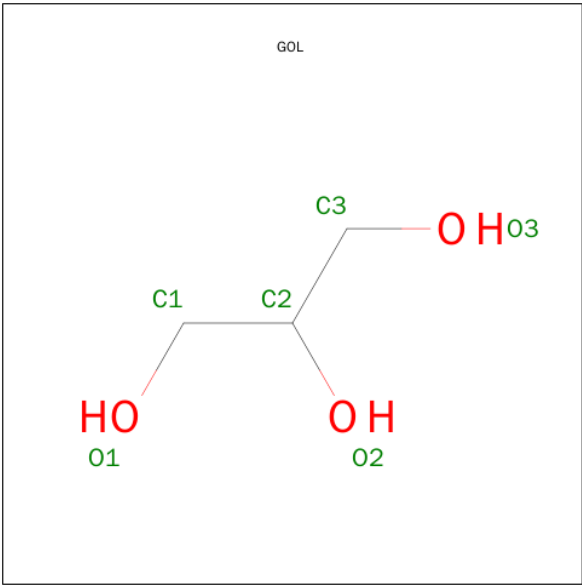
Chain	Residue	Modelled	Actual	Comment	Reference
A	631	MET	-	EXPRESSION TAG	UNP D3G6S4
A	632	ARG	-	EXPRESSION TAG	UNP D3G6S4
A	633	ARG	-	EXPRESSION TAG	UNP D3G6S4
A	634	LEU	-	EXPRESSION TAG	UNP D3G6S4
A	635	GLU	-	EXPRESSION TAG	UNP D3G6S4
A	636	HIS	-	EXPRESSION TAG	UNP D3G6S4
A	637	HIS	-	EXPRESSION TAG	UNP D3G6S4
A	638	HIS	-	EXPRESSION TAG	UNP D3G6S4
A	639	HIS	-	EXPRESSION TAG	UNP D3G6S4
A	640	HIS	-	EXPRESSION TAG	UNP D3G6S4
A	641	HIS	-	EXPRESSION TAG	UNP D3G6S4

- Molecule 2 is (2S,3R,4S,5R,6R)-6-[[[(2R,3S,4R,5R)-5-(2,4-DIOXOPYRIMIDIN-1-YL)-3,4-DIHYDROXY-OXOLAN-2-YL]METHOXY-HYDROXY-PHOSPHORYL]OXY-HYDROXY-PHOSPHORYL]OXY-3,4,5-TRIHYDROXY-OXANE-2-CARBOXYLIC ACID (three-letter code: UGB) (formula: C<sub>15</sub>H<sub>22</sub>N<sub>2</sub>O<sub>18</sub>P<sub>2</sub>).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			37	15	2	18	2		

- Molecule 3 is GLYCEROL (three-letter code: GOL) (formula: C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			6	3	3		
3	A	1	Total	C	O	0	0
			6	3	3		

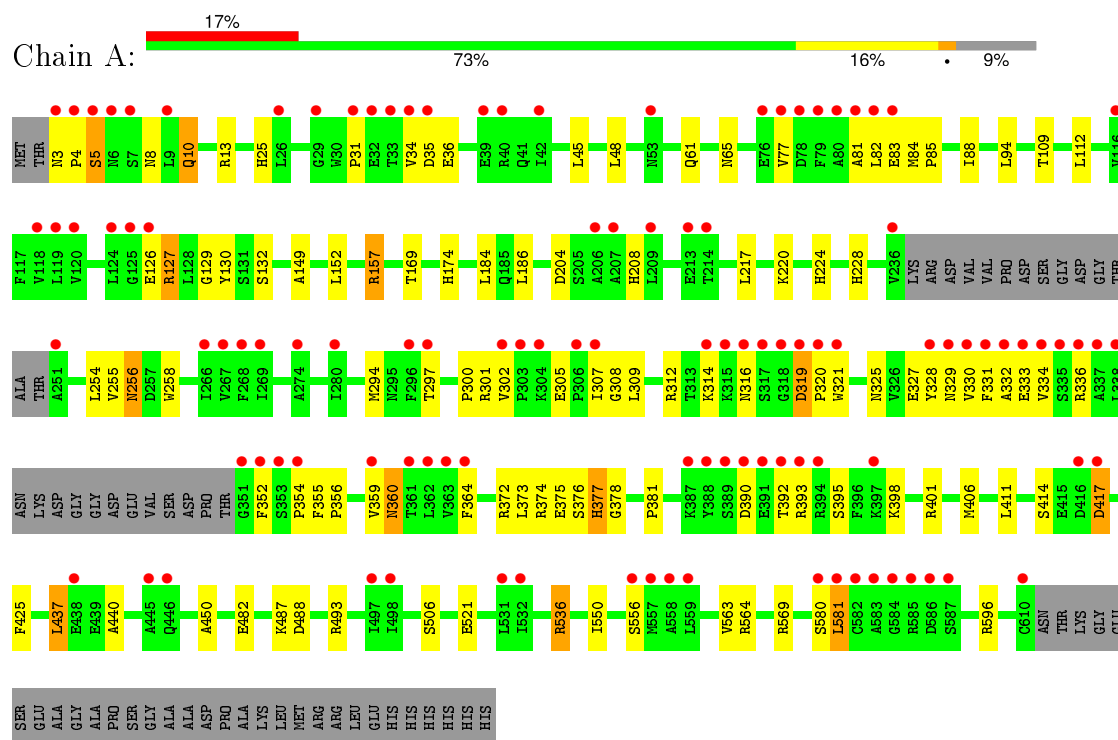
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	219	Total 219	O 219	0	0

### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ( $\text{RSRZ} > 2$ ). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: UDP-sugar pyrophosphorylase



## 4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	108.23Å 122.32Å 61.22Å 90.00° 105.42° 90.00°	Depositor
Resolution (Å)	29.51 – 2.18 29.51 – 2.18	Depositor EDS
% Data completeness (in resolution range)	94.2 (29.51-2.18) 94.2 (29.51-2.18)	Depositor EDS
$R_{merge}$	0.04	Depositor
$R_{sym}$	0.04	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.84 (at 2.18Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.6.1_357)	Depositor
R, $R_{free}$	0.200 , 0.243 0.198 , 0.244	Depositor DCC
$R_{free}$ test set	1839 reflections (5.12%)	DCC
Wilson B-factor (Å <sup>2</sup> )	33.7	Xtriage
Anisotropy	0.326	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 45.8	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.51$ , $\langle L^2 \rangle = 0.34$	Xtriage
Outliers	0 of 37791 reflections	Xtriage
$F_o, F_c$ correlation	0.96	EDS
Total number of atoms	4819	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	60.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.23% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 0.2 for perfectly twinned datasets.

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, UGB

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z  > 5$	RMSZ	$\# Z  > 5$
1	A	0.61	0/4646	0.67	2/6314 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed( $^{\circ}$ )	Ideal( $^{\circ}$ )
1	A	596	ARG	NE-CZ-NH2	-6.20	117.20	120.30
1	A	596	ARG	NE-CZ-NH1	5.58	123.09	120.30

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4551	0	4531	76	0
2	A	37	0	19	2	0
3	A	12	0	16	0	0
4	A	219	0	0	0	0
All	All	4819	0	4566	76	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 8.

All (76) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:126:GLU:O	1:A:129:GLY:N	2.07	0.87
1:A:157:ARG:HD2	1:A:506:SER:HA	1.62	0.81
1:A:316:ASN:O	1:A:319:ASP:HB2	1.82	0.79
1:A:10:GLN:HG2	1:A:34:VAL:HG23	1.65	0.77
1:A:204:ASP:OD1	1:A:208:HIS:HD2	1.69	0.74
1:A:157:ARG:HH12	1:A:556:SER:HB3	1.52	0.73
1:A:83:GLU:HG2	1:A:84:MET:N	2.02	0.73
1:A:381:PRO:HG2	1:A:411:LEU:HD12	1.71	0.73
1:A:319:ASP:OD1	1:A:320:PRO:HD2	1.92	0.69
1:A:301:ARG:O	1:A:352:PHE:HB3	1.92	0.69
1:A:390:ASP:HB3	1:A:392:THR:H	1.59	0.66
1:A:330:VAL:O	1:A:334:VAL:HG23	1.97	0.65
1:A:329:ASN:O	1:A:333:GLU:HG3	1.97	0.63
1:A:84:MET:HE1	1:A:354:PRO:CB	2.29	0.63
1:A:25:HIS:CE1	1:A:208:HIS:HB3	2.35	0.62
1:A:308:GLY:HA3	1:A:325:ASN:HD21	1.65	0.61
1:A:256:ASN:ND2	1:A:374:ARG:HH21	1.99	0.60
1:A:332:ALA:O	1:A:336:ARG:HG3	2.03	0.59
1:A:328:TYR:O	1:A:331:PHE:N	2.37	0.58
1:A:329:ASN:OD1	1:A:330:VAL:HG23	2.05	0.57
1:A:61:GLN:HE21	1:A:65:ASN:ND2	2.02	0.57
1:A:152:LEU:HD12	1:A:186:LEU:HD13	1.87	0.57
1:A:581:LEU:N	1:A:581:LEU:HD23	2.20	0.57
1:A:580:SER:HB2	1:A:581:LEU:HD23	1.85	0.56
1:A:81:ALA:HB3	1:A:314:LYS:CB	2.36	0.55
1:A:521:GLU:H	1:A:521:GLU:CD	2.10	0.55
1:A:440:ALA:HB1	1:A:450:ALA:HB1	1.87	0.54
1:A:327:GLU:CD	1:A:328:TYR:H	2.10	0.53
1:A:3:ASN:N	1:A:4:PRO:HD3	2.21	0.53
1:A:414:SER:OG	1:A:417:ASP:OD2	2.27	0.53
1:A:3:ASN:N	1:A:4:PRO:CD	2.72	0.52
1:A:302:VAL:HG22	1:A:305:GLU:OE2	2.08	0.52
1:A:255:VAL:HG23	1:A:256:ASN:HD22	1.75	0.52
1:A:376:SER:O	1:A:377:HIS:HB2	2.10	0.51
1:A:61:GLN:HE21	1:A:65:ASN:HD21	1.59	0.51
1:A:312:ARG:HG2	1:A:321:TRP:CE3	2.45	0.50
1:A:81:ALA:HB3	1:A:314:LYS:HB2	1.92	0.50
1:A:5:SER:HB3	1:A:8:ASN:ND2	2.26	0.50
1:A:48:LEU:HG	1:A:217:LEU:HD11	1.95	0.49
1:A:84:MET:HE1	1:A:354:PRO:C	2.34	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:256:ASN:N	1:A:256:ASN:HD22	2.12	0.47
1:A:84:MET:HE1	1:A:354:PRO:HB2	1.97	0.46
1:A:305:GLU:HB3	1:A:307:ILE:HG22	1.96	0.46
1:A:309:LEU:HD12	1:A:309:LEU:N	2.31	0.46
1:A:354:PRO:HB2	1:A:355:PHE:CD1	2.51	0.45
1:A:393:ARG:C	1:A:395:SER:H	2.20	0.45
1:A:294:MET:HG3	1:A:364:PHE:CE1	2.52	0.45
1:A:77:VAL:HG13	1:A:77:VAL:O	2.17	0.45
1:A:82:LEU:HA	1:A:82:LEU:HD12	1.64	0.45
1:A:536:ARG:HD2	1:A:556:SER:O	2.16	0.44
1:A:130:TYR:CE1	1:A:132:SER:HB2	2.52	0.44
1:A:487:LYS:O	1:A:488:ASP:HB2	2.17	0.44
1:A:220:LYS:HZ1	1:A:398:LYS:HE3	1.82	0.44
1:A:297:THR:O	1:A:359:VAL:HG22	2.18	0.43
1:A:85:PRO:HB2	1:A:88:ILE:HD11	2.00	0.43
1:A:13:ARG:HB2	1:A:45:LEU:HD21	1.99	0.43
1:A:373:LEU:HD12	1:A:378:GLY:HA2	2.00	0.43
1:A:256:ASN:HD21	1:A:374:ARG:HH21	1.66	0.43
1:A:169:THR:OG1	1:A:174:HIS:HD2	2.03	0.42
1:A:94:LEU:HD12	1:A:94:LEU:C	2.40	0.42
1:A:355:PHE:HA	1:A:356:PRO:HD3	1.82	0.42
1:A:550:ILE:HD13	1:A:563:VAL:HG21	2.02	0.42
1:A:360:ASN:ND2	2:A:642:UGB:H2'	2.35	0.42
1:A:220:LYS:NZ	1:A:398:LYS:HE3	2.35	0.42
1:A:254:LEU:HG	1:A:258:TRP:CZ2	2.53	0.42
1:A:307:ILE:HD11	2:A:642:UGB:O'P	2.20	0.42
1:A:109:THR:HA	1:A:112:LEU:HD12	2.02	0.42
1:A:482:GLU:HG3	1:A:493:ARG:HB2	2.02	0.41
1:A:224:HIS:CE1	1:A:406:MET:H	2.39	0.41
1:A:437:LEU:HA	1:A:437:LEU:HD12	1.90	0.41
1:A:300:PRO:HD3	1:A:425:PHE:O	2.21	0.41
1:A:31:PRO:CB	1:A:36:GLU:HB2	2.51	0.41
1:A:149:ALA:HB2	1:A:184:LEU:HD13	2.02	0.41
1:A:327:GLU:CD	1:A:328:TYR:N	2.74	0.40
1:A:228:HIS:O	1:A:373:LEU:HD11	2.21	0.40
1:A:372:ARG:NE	1:A:372:ARG:HA	2.37	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	580/641 (90%)	560 (97%)	19 (3%)	1 (0%)	52	57

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	127	ARG

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	493/536 (92%)	476 (97%)	17 (3%)	44	52

All (17) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	SER
1	A	10	GLN
1	A	35	ASP
1	A	127	ARG
1	A	157	ARG
1	A	256	ASN
1	A	319	ASP
1	A	360	ASN
1	A	375	GLU
1	A	377	HIS

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Mol	Chain	Res	Type
1	A	401	ARG
1	A	417	ASP
1	A	437	LEU
1	A	536	ARG
1	A	564	ARG
1	A	569	ARG
1	A	581	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	8	ASN
1	A	41	GLN
1	A	65	ASN
1	A	156	GLN
1	A	174	HIS
1	A	179	GLN
1	A	208	HIS
1	A	256	ASN
1	A	325	ASN
1	A	446	GLN
1	A	527	GLN
1	A	576	HIS

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

### 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

There are no non-standard protein/DNA/RNA residues in this entry.

### 5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

### 5.6 Ligand geometry ⓘ

3 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
2	UGB	A	642	-	27,39,39	1.76	4 (14%)	41,60,60	2.03	9 (21%)
3	GOL	A	643	-	5,5,5	0.42	0	5,5,5	0.54	0
3	GOL	A	644	-	5,5,5	0.48	0	5,5,5	0.34	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	UGB	A	642	-	-	0/17/61/61	0/3/3/3
3	GOL	A	643	-	-	0/4/4/4	0/0/0/0
3	GOL	A	644	-	-	0/4/4/4	0/0/0/0

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	642	UGB	C3D-C4D	2.25	1.59	1.53
2	A	642	UGB	C2'-C3'	2.64	1.59	1.52
2	A	642	UGB	C6-N1	3.25	1.40	1.35
2	A	642	UGB	O4-C4	4.28	1.35	1.24

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	642	UGB	O5'-C1'-O3B	-3.07	107.31	111.36
2	A	642	UGB	O3B-PB-O2B	-2.77	98.55	109.46
2	A	642	UGB	O5D-C5D-C4D	2.43	118.08	109.12
2	A	642	UGB	O4D-C4D-C5D	2.69	118.96	109.32
2	A	642	UGB	O4D-C1D-N1	3.34	115.13	108.08
2	A	642	UGB	O3A-PA-O5D	3.98	113.51	102.94
2	A	642	UGB	C4-N3-C2	4.67	118.76	114.14
2	A	642	UGB	O3B-C1'-C2'	5.19	118.09	108.39
2	A	642	UGB	O3A-PB-O3B	6.20	121.49	103.63

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	642	UGB	2	0

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data ⓘ

### 6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	582/641 (90%)	0.85	111 (19%) 2 2	26, 51, 121, 170	4 (0%)

All (111) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	352	PHE	11.9
1	A	338	LEU	9.3
1	A	351	GLY	8.9
1	A	585	ARG	8.4
1	A	393	ARG	8.2
1	A	586	ASP	7.9
1	A	80	ALA	7.6
1	A	334	VAL	7.3
1	A	337	ALA	6.6
1	A	582	CYS	6.4
1	A	81	ALA	6.3
1	A	353	SER	6.2
1	A	584	GLY	6.0
1	A	332	ALA	5.9
1	A	303	PRO	5.8
1	A	251	ALA	5.7
1	A	328	TYR	5.6
1	A	392	THR	5.5
1	A	331	PHE	5.3
1	A	336	ARG	5.3
1	A	126	GLU	5.1
1	A	390	ASP	4.8
1	A	79	PHE	4.6
1	A	321	TRP	4.5
1	A	362	LEU	4.5
1	A	318	GLY	4.4
1	A	389	SER	4.4

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Mol	Chain	Res	Type	RSRZ
1	A	34	VAL	4.4
1	A	268	PHE	4.2
1	A	6	ASN	4.2
1	A	82	LEU	4.2
1	A	581	LEU	4.1
1	A	317	SER	4.1
1	A	29	GLY	4.0
1	A	269	ILE	4.0
1	A	335	SER	4.0
1	A	214	THR	3.9
1	A	354	PRO	3.8
1	A	304	LYS	3.8
1	A	363	VAL	3.7
1	A	559	LEU	3.6
1	A	213	GLU	3.6
1	A	320	PRO	3.6
1	A	394	ARG	3.5
1	A	364	PHE	3.5
1	A	388	TYR	3.4
1	A	40	ARG	3.4
1	A	329	ASN	3.3
1	A	78	ASP	3.3
1	A	31	PRO	3.3
1	A	361	THR	3.2
1	A	558	ALA	3.2
1	A	39	GLU	3.2
1	A	319	ASP	3.2
1	A	33	THR	3.2
1	A	397	LYS	3.2
1	A	5	SER	3.2
1	A	267[A]	VAL	3.2
1	A	7	SER	3.1
1	A	316	ASN	3.1
1	A	391	GLU	3.1
1	A	3	ASN	3.1
1	A	333	GLU	3.1
1	A	445	ALA	3.0
1	A	35	ASP	3.0
1	A	125	GLY	3.0
1	A	446	GLN	3.0
1	A	77	VAL	2.9
1	A	119	LEU	2.9

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Mol	Chain	Res	Type	RSRZ
1	A	557	MET	2.8
1	A	359	VAL	2.8
1	A	124	LEU	2.7
1	A	26	LEU	2.7
1	A	296	PHE	2.7
1	A	580	SER	2.6
1	A	387	LYS	2.5
1	A	438	GLU	2.5
1	A	314	LYS	2.5
1	A	9	LEU	2.5
1	A	4	PRO	2.5
1	A	587	SER	2.5
1	A	118	VAL	2.4
1	A	583	ALA	2.4
1	A	53	ASN	2.4
1	A	209	LEU	2.4
1	A	206	ALA	2.4
1	A	42	ILE	2.4
1	A	417	ASP	2.3
1	A	120	VAL	2.3
1	A	266	ILE	2.3
1	A	274	ALA	2.3
1	A	416	ASP	2.3
1	A	307	ILE	2.3
1	A	302	VAL	2.2
1	A	315	LYS	2.2
1	A	330	VAL	2.2
1	A	532[A]	ILE	2.2
1	A	116	VAL	2.2
1	A	236	VAL	2.2
1	A	76	GLU	2.2
1	A	497	ILE	2.2
1	A	610	CYS	2.2
1	A	32	GLU	2.2
1	A	83	GLU	2.2
1	A	207	ALA	2.2
1	A	306	PRO	2.1
1	A	280	ILE	2.1
1	A	556	SER	2.0
1	A	498	ILE	2.0
1	A	531	LEU	2.0
1	A	297	THR	2.0

## 6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

## 6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors( $\text{\AA}^2$ )	Q<0.9
3	GOL	A	643	6/6	0.68	0.37	4.61	76,79,80,81	0
2	UGB	A	642	37/37	0.93	0.14	-0.37	38,61,156,257	0
3	GOL	A	644	6/6	0.91	0.22	-	65,69,70,71	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.